

Variable Speed Motor Control

August Fry
Charles Baker

1906

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Fry, August
Variable Speed Motor Control

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14-
A COMPARATIVE STUDY OF
VARIABLE SPEED MOTOR CONTROL

A THESIS

PRESENTED BY

AUGUST FRY
CHARLES BAKER

TO THE

PRESIDENT AND FACULTY

OF

ARMOUR INSTITUTE OF TECHNOLOGY

FOR THE DEGREE OF

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

HAVING COMPLETED THE PRESCRIBED COURSE OF STUDY IN

ELECTRICAL ENGINEERING

JUNE, 1906

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THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and change. It begins with the first settlers who came to the shores of North America. These early explorers and settlers faced many challenges, but they persevered and built a new nation. Over time, the United States has grown from a small colony to a powerful world leader. It has fought wars, experienced economic crises, and made great strides in science and technology. The story of the United States is a testament to the resilience and spirit of its people. It is a story of hope and dreams, of a land where freedom and opportunity are cherished. The history of the United States is a story that continues to unfold, and it is one that we all have a part in writing.

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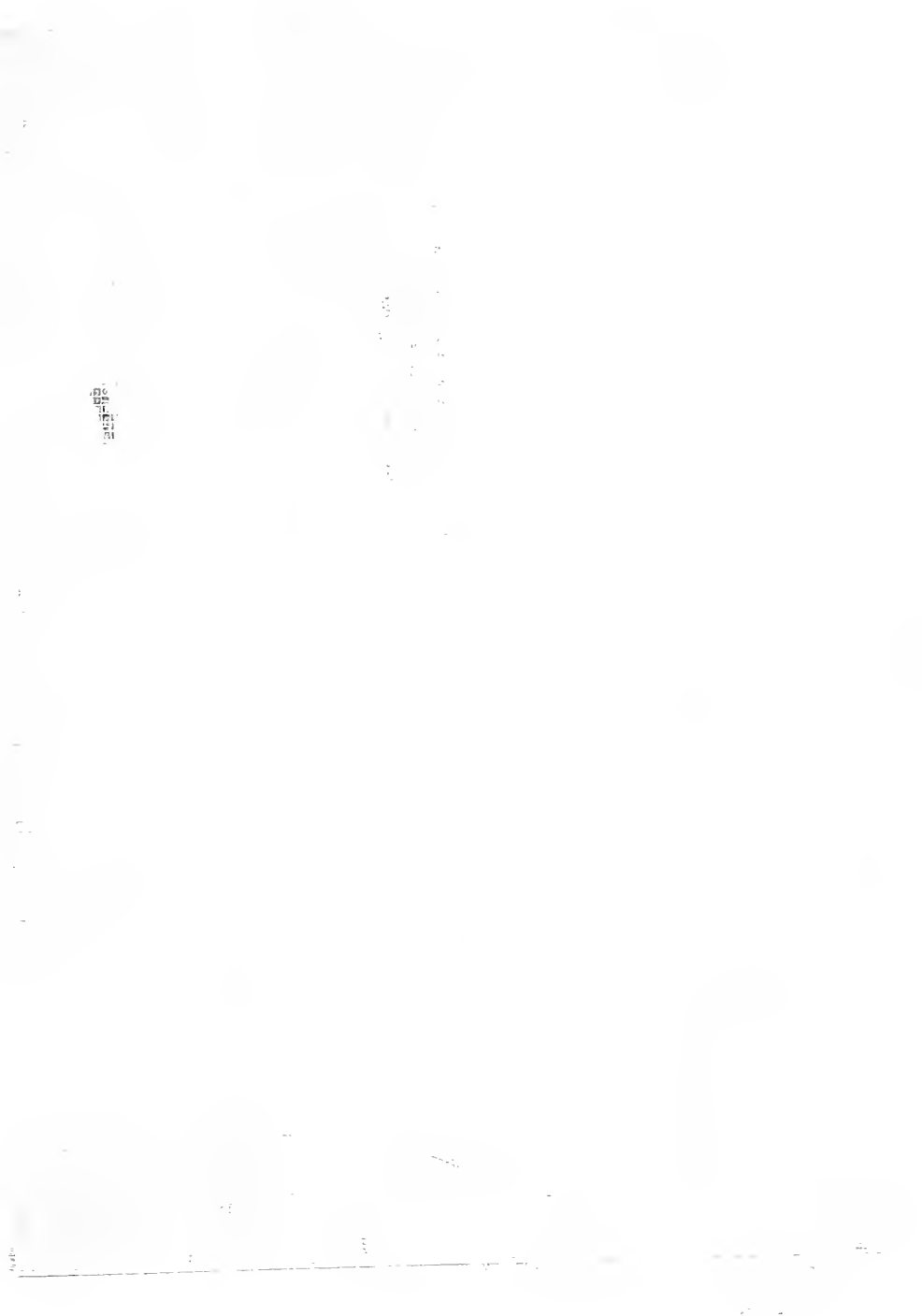
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| 91.5 | 6.59 | | | | |



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| Full | (1) | (2) | (3) | (4) | (5) |
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| 111.0 | 0.0 | 111.0 | 111.0 | 111.0 | 111.0 |
| 112.0 | 0.0 | 112.0 | 112.0 | 112.0 | 112.0 |
| 113.0 | 0.0 | 113.0 | 113.0 | 113.0 | 113.0 |
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| 121.0 | 0.0 | 121.0 | 121.0 | 121.0 | 121.0 |
| 122.0 | 0.0 | 122.0 | 122.0 | 122.0 | 122.0 |
| 123.0 | 0.0 | 123.0 | 123.0 | 123.0 | 123.0 |
| 124.0 | 0.0 | 124.0 | 124.0 | 124.0 | 124.0 |
| 125.0 | 0.0 | 125.0 | 125.0 | 125.0 | 125.0 |
| 126.0 | 0.0 | 126.0 | 126.0 | 126.0 | 126.0 |
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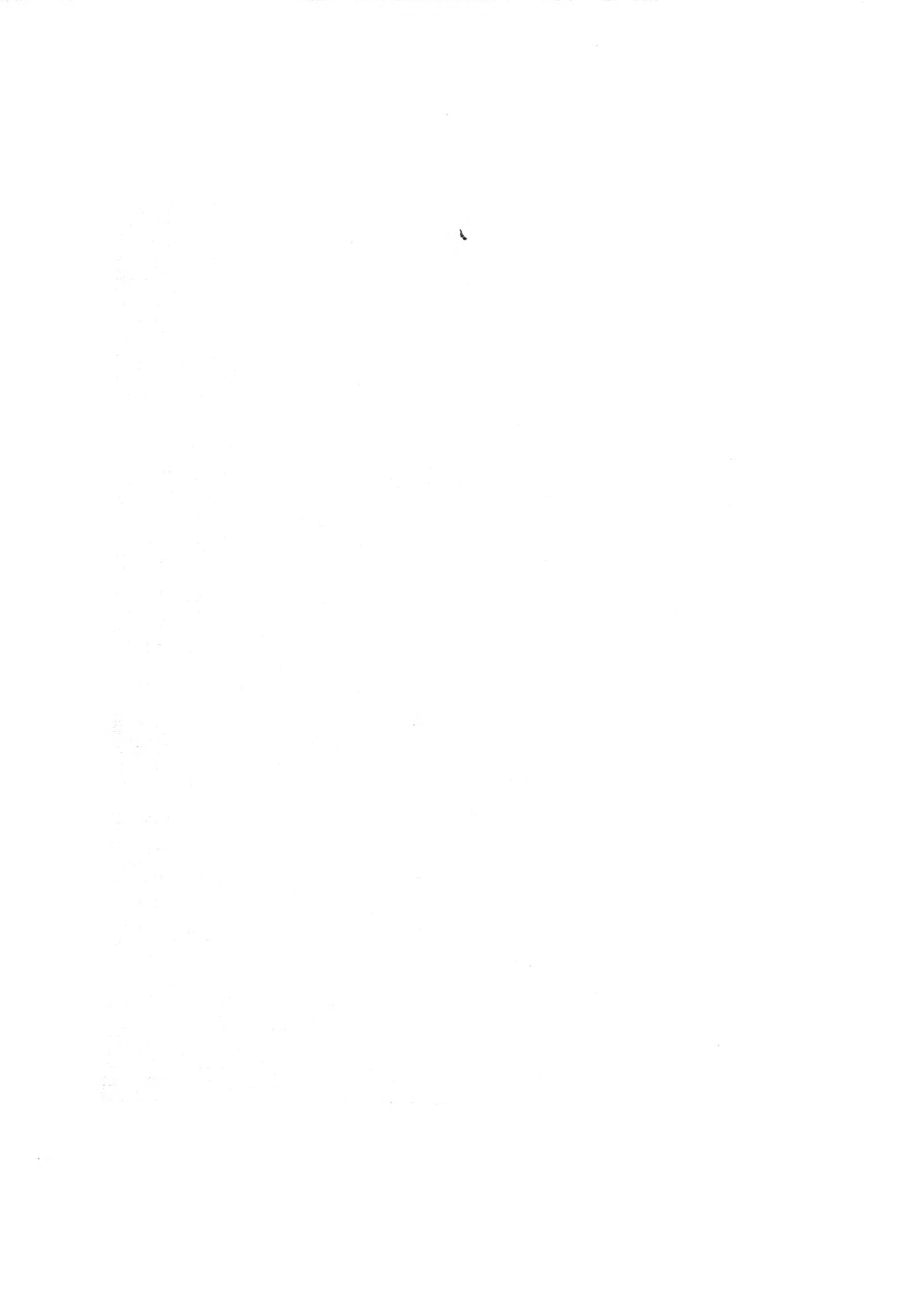
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Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group and the experimental group. The control group was divided into two subgroups: the control group and the control group. The experimental group was divided into two subgroups: the experimental group and the experimental group.



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Table 1

| λ | f | n | n' | R | λ | f |
|-----------|-----|------|------|-------|-----------|------|
| 18.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 19.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 20.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 21.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 22.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 23.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 24.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 25.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 26.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 27.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 28.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 29.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 30.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |

| | | | | | | |
|------|-----|------|-----|-------|-----|------|
| 31.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 32.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 33.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 34.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 35.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 36.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 37.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 38.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 39.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |
| 40.0 | 2.4 | 2354 | 500 | 10.10 | 2.4 | 2354 |

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| f | n | n^2 | n^3 | n^4 | n^5 | R |
|-------|-----|-------|---------|-----------|-------------|-------|
| 5.0 | 5 | 25 | 125 | 625 | 3125 | 5.7 |
| 10.0 | 10 | 100 | 1000 | 10000 | 100000 | 10.7 |
| 15.0 | 15 | 225 | 3375 | 50625 | 759375 | 15.7 |
| 20.0 | 20 | 400 | 8000 | 160000 | 3200000 | 20.7 |
| 25.0 | 25 | 625 | 15625 | 390625 | 9765625 | 25.7 |
| 30.0 | 30 | 900 | 27000 | 810000 | 24300000 | 30.7 |
| 35.0 | 35 | 1225 | 42875 | 1500625 | 52521875 | 35.7 |
| 40.0 | 40 | 1600 | 64000 | 2560000 | 102400000 | 40.7 |
| 45.0 | 45 | 2025 | 91125 | 4100625 | 183037500 | 45.7 |
| 50.0 | 50 | 2500 | 125000 | 6250000 | 312500000 | 50.7 |
| 55.0 | 55 | 3025 | 166375 | 9268125 | 513281250 | 55.7 |
| 60.0 | 60 | 3600 | 216000 | 12960000 | 777600000 | 60.7 |
| 65.0 | 65 | 4225 | 274625 | 18066250 | 1178406250 | 65.7 |
| 70.0 | 70 | 4900 | 343000 | 24010000 | 1680700000 | 70.7 |
| 75.0 | 75 | 5625 | 421875 | 31359375 | 2356328125 | 75.7 |
| 80.0 | 80 | 6400 | 512000 | 40960000 | 3276800000 | 80.7 |
| 85.0 | 85 | 7225 | 614125 | 52203125 | 4437265625 | 85.7 |
| 90.0 | 90 | 8100 | 729000 | 65610000 | 5904900000 | 90.7 |
| 95.0 | 95 | 9025 | 857375 | 81450625 | 7732812500 | 95.7 |
| 100.0 | 100 | 10000 | 1000000 | 100000000 | 10000000000 | 100.7 |

Table 1

| Year | Age | Sex | Weight (kg) | Height (cm) | Body Mass Index (kg/m ²) | Waist Circumference (cm) |
|------|------|------|-------------|-------------|--------------------------------------|--------------------------|
| 1978 | 1.04 | 4.1 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1979 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1980 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1981 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1982 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1983 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1984 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1985 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1986 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1987 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1988 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1989 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1990 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1991 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1992 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1993 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1994 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1995 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1996 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1997 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1998 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1999 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2000 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2001 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2002 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2003 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2004 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2005 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2006 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2007 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2008 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2009 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2010 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2011 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2012 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2013 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2014 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2015 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2016 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2017 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2018 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2019 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |
| 2020 | 1.04 | 1.05 | 1.0 | 1.0 | 1.0 | 1.0 |

Table 1

Temperature

Time

Location

| Temperature | | Time | | Location | |
|-------------|------|------|-------|----------|-----|
| in. | in. | at | point | in. | in. |
| 2.0 | 1.1 | 4.5 | 1.5 | 2.0 | 1.1 |
| 7.7 | 1.2 | 1.1 | 1.7 | 2.0 | 1.1 |
| 1.3 | 1.1 | 1.7 | 1.7 | 2.0 | 1.1 |
| 26.7 | 1.1 | 2.34 | 1.7 | 2.0 | 1.1 |
| 15.0 | 1.2 | 1.07 | 1.7 | 2.0 | 1.1 |
| 45.0 | 1.1 | 1.07 | 1.7 | 2.0 | 1.1 |
| 54.0 | 1.15 | 3.00 | 1.7 | 2.0 | 1.1 |
| 15.0 | 1.15 | 1.01 | 1.7 | 2.0 | 1.1 |
| 73.0 | 1.15 | 1.50 | 1.7 | 2.0 | 1.1 |
| | | | | | |
| 15.7 | 1.15 | 1.14 | 1.7 | 2.0 | 1.1 |
| 24.7 | 1.1 | 1.13 | 1.7 | 2.0 | 1.1 |
| 2.0 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 4.3 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 1.1 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 15.7 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 15.4 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| | | | | | |
| 7.7 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 14.0 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 1.1 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 1.1 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 1.1 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 1.1 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 1.1 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |
| 1.1 | 1.1 | 1.1 | 1.7 | 2.0 | 1.1 |

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185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270 | 271 | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299 | 300 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332 | 333 | 334 | 335 | 336 | 337 | 338 | 339 | 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | 361 | 362 | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | 371 | 372 | 373 | 374 | 375 | 376 | 377 | 378 | 379 | 380 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 | 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 | 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 | 531 | 532 | 533 | 534 | 535 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 | 551 | 552 | 553 | 554 | 555 | 556 | 557 | 558 | 559 | 560 | 561 | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 | 571 | 572 | 573 | 574 | 575 | 576 | 577 | 578 | 579 | 580 | 581 | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 | 591 | 592 | 593 | 594 | 595 | 596 | 597 | 598 | 599 | 600 | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 | 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 | 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 | 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 | 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 | 721 | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 | 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 | 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 | 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 | 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 | 815 | 816 | 817 | 818 | 819 | 820 | 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 | 835 | 836 | 837 | 838 | 839 | 840 | 841 | 842 | 843 | 844 | 845 | 846 | 847 | 848 | 849 | 850 | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 | 861 | 862 | 863 | 864 | 865 | 866 | 867 | 868 | 869 | 870 | 871 | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 | 881 | 882 | 883 | 884 | 885 | 886 | 887 | 888 | 889 | 890 | 891 | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 | 901 | 902 | 903 | 904 | 905 | 906 | 907 | 908 | 909 | 910 | 911 | 912 | 913 | 914 | 915 | 916 | 917 | 918 | 919 | 920 | 921 | 922 | 923 | 924 | 925 | 926 | 927 | 928 | 929 | 930 | 931 | 932 | 933 | 934 | 935 | 936 | 937 | 938 | 939 | 940 | 941 | 942 | 943 | 944 | 945 | 946 | 947 | 948 | 949 | 950 | 951 | 952 | 953 | 954 | 955 | 956 | 957 | 958 | 959 | 960 | 961 | 962 | 963 | 964 | 965 | 966 | 967 | 968 | 969 | 970 | 971 | 972 | 973 | 974 | 975 | 976 | 977 | 978 | 979 | 980 | 981 | 982 | 983 | 984 | 985 | 986 | 987 | 988 | 989 | 990 | 991 | 992 | 993 | 994 | 995 | 996 | 997 | 998 | 999 | 1000 | 1001 | 1002 | 1003 | 1004 | 1005 | 1006 | 1007 | 1008 | 1009 | 1010 | 1011 | 1012 | 1013 | 1014 | 1015 | 1016 | 1017 | 1018 | 1019 | 1020 | 1021 | 1022 | 1023 | 1024 | 1025 | 1026 | 1027 | 1028 | 1029 | 1030 | 1031 | 1032 | 1033 | 1034 | 1035 | 1036 | 1037 | 1038 | 1039 | 1040 | 1041 | 1042 | 1043 | 1044 | 1045 | 1046 | 1047 | 1048 | 1049 | 1050 | 1051 | 1052 | 1053 | 1054 | 1055 | 1056 | 1057 | 1058 | 1059 | 1060 | 1061 | 1062 | 1063 | 1064 | 1065 | 1066 | 1067 | 1068 | 1069 | 1070 | 1071 | 1072 | 1073 | 1074 | 1075 | 1076 | 1077 | 1078 | 1079 | 1080 | 1081 | 1082 | 1083 | 1084 | 1085 | 1086 | 1087 | 1088 | 1089 | 1090 | 1091 | 1092 | 1093 | 1094 | 1095 | 1096 | 1097 | 1098 | 1099 | 1100 | 1101 | 1102 | 1103 | 1104 | 1105 | 1106 | 1107 | 1108 | 1109 | 1110 | 1111 | 1112 | 1113 | 1114 | 1115 | 1116 | 1117 | 1118 | 1119 | 1120 | 1121 | 1122 | 1123 | 1124 | 1125 | 1126 | 1127 | 1128 | 1129 | 1130 | 1131 | 1132 | 1133 | 1134 | 1135 | 1136 | 1137 | 1138 | 1139 | 1140 | 1141 | 1142 | 1143 | 1144 | 1145 | 1146 | 1147 | 1148 | 1149 | 1150 | 1151 | 1152 | 1153 | 1154 | 1155 | 1156 | 1157 | 1158 | 1159 | 1160 | 1161 | 1162 | 1163 | 1164 | 1165 | 1166 | 1167 | 1168 | 1169 | 1170 | 1171 | 1172 | 1173 | 1174 | 1175 | 1176 | 1177 | 1178 | 1179 | 1180 | 1181 | 1182 | 1183 | 1184 | 1185 | 1186 | 1187 | 1188 | 1189 | 1190 | 1191 | 1192 | 1193 | 1194 | 1195 | 1196 | 1197 | 1198 | 1199 | 1200 | 1201 | 1202 | 1203 | 1204 | 1205 | 1206 | 1207 | 1208 | 1209 | 1210 | 1211 | 1212 | 1213 | 1214 | 1215 | 1216 | 1217 | 1218 | 1219 | 1220 | 1221 | 1222 | 1223 | 1224 | 1225 | 1226 | 1227 | 1228 | 1229 | 1230 | 1231 | 1232 | 1233 | 1234 | 1235 | 1236 | 1237 | 1238 | 1239 | 1240 | 1241 | 1242 | 1243 | 1244 | 1245 | 1246 | 1247 | 1248 | 1249 | 1250 | 1251 | 1252 | 1253 | 1254 | 1255 | 1256 | 1257 | 1258 | 1259 | 1260 | 1261 | 1262 | 1263 | 1264 | 1265 | 1266 | 1267 | 1268 | 1269 | 1270 | 1271 | 1272 | 1273 | 1274 | 1275 | 1276 | 1277 | 1278 | 1279 | 1280 | 1281 | 1282 | 1283 | 1284 | 1285 | 1286 | 1287 | 1288 | 1289 | 1290 | 1291 | 1292 | 1293 | 1294 | 1295 | 1296 | 1297 | 1298 | 1299 | 1300 | 1301 | 1302 | 1303 | 1304 | 1305 | 1306 | 1307 | 1308 | 1309 | 1310 | 1311 | 1312 | 1313 | 1314 | 1315 | 1316 | 1317 | 1318 | 1319 | 1320 | 1321 | 1322 | 1323 | 1324 | 1325 | 1326 | 1327 | 1328 | 1329 | 1330 | 1331 | 1332 | 1333 | 1334 | 1335 | 1336 | 1337 | 1338 | 1339 | 1340 | 1341 | 1342 | 1343 | 1344 | 1345 | 1346 | 1347 | 1348 | 1349 | 1350 | 1351 | 1352 | 1353 | 1354 | 1355 | 1356 | 1357 | 1358 | 1359 | 1360 | 1361 | 1362 | 1363 | 1364 | 1365 | 1366 | 1367 | 1368 | 1369 | 1370 | 1371 | 1372 | 1373 | 1374 | 1375 | 1376 | 1377 | 1378 | 1379 | 1380 | 1381 | 1382 | 1383 | 1384 | 1385 | 1386 | 1387 | 1388 | 1389 | 1390 | 1391 | 1392 | 1393 | 1394 | 1395 | 1396 | 1397 | 1398 | 1399 | 1400 | 1401 | 1402 | 1403 | 1404 | 1405 | 1406 | 1407 | 1408 | 1409 | 1410 | 1411 | 1412 | 1413 | 1414 | 1415 | 1416 | 1417 | 1418 | 1419 | 1420 | 1421 | 1422 | 1423 | 1424 | 1425 | 1426 | 1427 | 1428 | 1429 | 1430 | 1431 | 1432 | 1433 | 1434 | 1435 | 1436 | 1437 | 1438 | 1439 | 1440 | 1441 | 1442 | 1443 | 1444 | 1445 | 1446 | 1447 | 1448 | 1449 | 1450 | 1451 | 1452 | 1453 | 1454 | 1455 | 1456 | 1457 | 1458 | 1459 | 1460 | 1461 | 1462 | 1463 | 1464 | 1465 | 1466 | 1467 | 1468 | 1469 | 1470 | 1471 | 1472 | 1473 | 1474 | 1475 | 1476 | 1477 | 1478 | 1479 | 1480 | 1481 | 1482 | 1483 | 1484 | 1485 | 1486 | 1487 | 1488 | 1489 | 1490 | 14 |
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| 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |

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| 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
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1. The first part of the document is a list of names and addresses, which are arranged in a columnar fashion. The names are written in a cursive script, and the addresses are written in a more formal, printed style. The list appears to be a directory or a roster of some kind.

2. The second part of the document is a series of short, handwritten notes or entries. These are arranged in a columnar fashion, similar to the first part. The notes are written in a cursive script, and they appear to be related to the names and addresses listed in the first part.

3. The third part of the document is a series of short, handwritten notes or entries. These are arranged in a columnar fashion, similar to the first part. The notes are written in a cursive script, and they appear to be related to the names and addresses listed in the first part.

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1. The first part of the paper is devoted to a general

discussion of the problem and the main results.

2. In the second part we consider the case of a

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